



Misconceptions Regarding Dental Health Care and Oral Hygiene Practices among Rural Population of Western Maharashtra – A Cross-Sectional Study

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ABSTRACT

Introduction:

The rural population in Western Maharashtra faces numerous misconceptions related to dental health and oral hygiene, significantly affecting their health outcomes. Oral health is vital not only for maintaining a smile but also for ensuring overall well-being, as poor oral health can lead to systemic issues, nutritional deficiencies, and lower self-esteem. In this context, traditional beliefs often deter individuals from seeking appropriate dental care, leading to an increase in dental problems. By examining prevalent myths and their underlying sociocultural factors, this study aims to provide insights that can enhance public health initiatives targeting these communities.

Methodology:

A cross-sectional survey was administered to assess prevalent dental myths in rural Maharashtra. Utilizing a door-to-door approach, the study involved 196 participants, aged 18 and above, who provided informed consent. A structured, self-administered questionnaire in the local language was developed to ensure comprehensibility. Preceding the main survey, a pilot study was performed, yielding a Cronbach's alpha coefficient of 0.812. Statistical analysis was conducted using SPSS with a significance level of $P < 0.05$, employing descriptive and chi-square tests to investigate associations between demographic factors and misconceptions.

Results:

Analysis revealed that among 196 participants, 55.1% were female and a significant proportion were well-educated, with 45.9% holding graduate degrees. Notably, common myths included the belief that dental pain is due to dentist incompetence (41.3%) and misconceptions surrounding dental treatments during pregnancy (45.1%). Chi-square tests indicated significant rural vs. urban disparities in understanding dental health, with cultural beliefs significantly influencing perceptions about treatment efficacy. Misunderstandings regarding the nature of dental decay and preventive care were prevalent, demonstrating the necessity for targeted educational interventions.

Conclusion:

Addressing misconceptions about dental health in rural Maharashtra is crucial for improving oral health outcomes. Public health strategies should focus on enhancing health literacy and dispelling myths through culturally sensitive educational programs that engage the community. By fostering a better understanding of dental care, individuals may develop healthier practices and a more favorable outlook towards seeking treatment, thereby reducing the prevalence of dental issues in rural populations. Interprofessional collaboration among healthcare providers is essential to streamline these initiatives and effectively address barriers to accessing dental care.

INTRODUCTION

Oral health is much more than having a bright smile or avoiding bad breath—it's vital to your overall well-being ¹. Good oral health contributes to better self-esteem and mental health. Healthy teeth and gums are essential for clear speech ². Dental problems can cause pain, embarrassment, and anxiety, affecting social interactions and confidence. It can also lead to difficulties in pronunciation and communication, impacting both personal and professional life. Healthy teeth and gums



are essential for proper chewing, which is the first step in digestion. Poor oral health can make it difficult to chew and swallow, leading to nutritional deficiencies.

The burden of oral problems are more prevalent in rural populations particularly where access to dental care and health education may be limited. In India, a significant portion of the population resides in rural areas where traditional beliefs and misconceptions about oral hygiene are widespread. These misconceptions, ranging from the efficacy of home remedies to the misunderstanding of the importance of regular dental visits, contribute to poor oral health practices³. Although many misconceptions are harmless, while some have consequences such as severe oral health problems and treatment-seeking behavior.

India's population is characterized by a rich tapestry of cultural and religious diversity. Sociocultural factors and traditional beliefs play a significant role in shaping false perceptions and myths within communities. Few examples of oral health-related issues influenced by sociocultural factors and traditional beliefs in rural India, in many rural areas, the use of smokeless tobacco (such as chewing tobacco and betel quid) is deeply ingrained in the culture. This practice is often seen as a social norm and is linked to various oral health issues, including oral cancer, gum disease, and tooth decay. Another myth like extracting upper teeth can cause vision loss discourages people from seeking necessary dental treatments. The study in Mangaluru found that 55.5% of participants believed this myth⁴. Such myths deter people from seeking necessary dental treatments, leading to prolonged pain and infections.

This survey aims to explore the extent of these falsely perceived notions within rural communities and assess their impact on oral health outcomes. By identifying and understanding these beliefs, this study is designed to present valuable insights that can guide targeted public health initiatives, improve education, and ultimately contribute to better dental health awareness in these underserved areas. Through a comprehensive examination of the beliefs and behaviors surrounding oral health care, this research strives to contribute to developing effective interventions that address the unique challenges faced by rural populations in India.

METHODOLOGY

A cross-sectional questionnaire study was conducted in villages in Maharashtra to assess the prevalence of myths among the rural population regarding dental health.

Informed consent was obtained from all participants before they took part in the study, ensuring that they understood the purpose of the research and agreed to participate voluntarily.

The survey was conducted through a door-to-door approach, targeting individuals who were present at the time of the survey. Only individuals aged 18 years and older who provided consent were included in the study.

A self-administered questionnaire consisting of 30 closed-ended questions was created in the local language to ensure that all participants could understand and respond accurately. The questionnaire included demographic information and questions about common myths related to dentistry.

In preparation for the main survey, a pilot study was conducted involving a sample of 20 individuals to evaluate the clarity and effectiveness of the questionnaire. The pilot study yielded a Cronbach's alpha reliability coefficient of 0.812. This helped refine the survey instrument and ensure that the questions effectively on misconceptions regarding dental health care and oral hygiene practices.

The necessary sample size for the main survey was calculated using the Epi Info software, incorporating a confidence level of 95% and a margin of error of 5%. This calculation recommended a sample size of 196 respondents to ensure the statistical power and representativeness of the data. This step was important to make any necessary adjustments to the questions.

The data collected was entered into Microsoft Excel and analysed using the Statistical Package for the Social Sciences (SPSS) version 20.0. Descriptive statistics were used to summarize the demographic information and responses. The Chi-square test was applied to examine the relationship between demographic factors and the prevalence of dental myths. A significance level of $P < 0.05$ was set to determine if the findings were statistically significant. The data was presented in the form of tables and graphs.

Result:-

The survey data among 196 participants showed a slight female predominance (55.1%) compared to males (44.9%). Educational background revealed that nearly half (45.9%) were graduates or above, followed by higher secondary education (26.0%), while secondary, primary, and non-educated groups each constituted approximately 9% of the sample. The mean age of respondents was 30.7 ± 1.45 years, indicating a predominantly young adult population with moderate age variation.

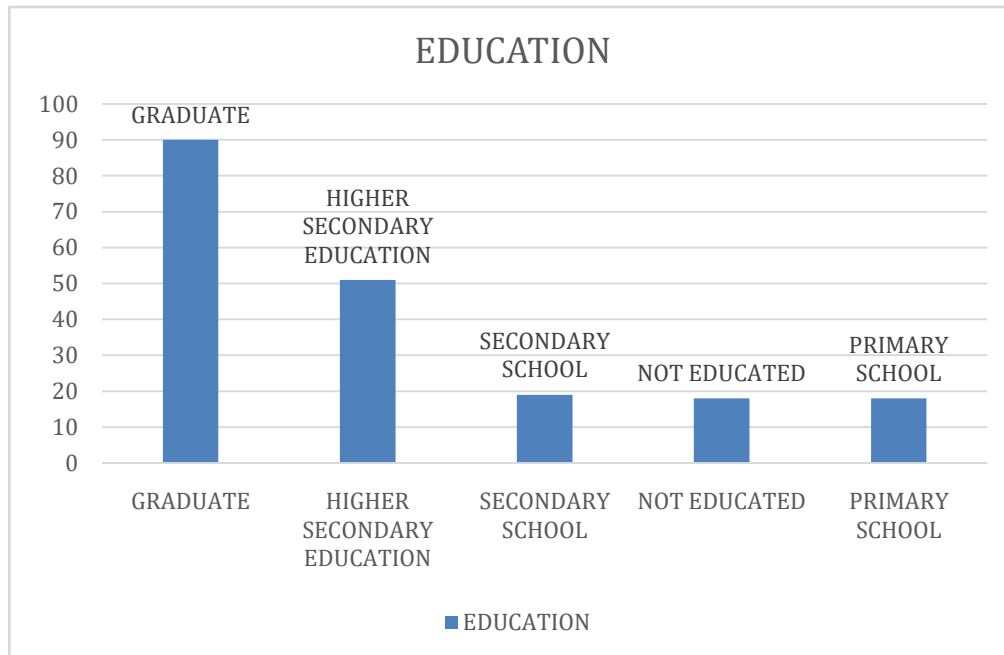


Fig 1 Shows Educational Distribution Of Study Participants

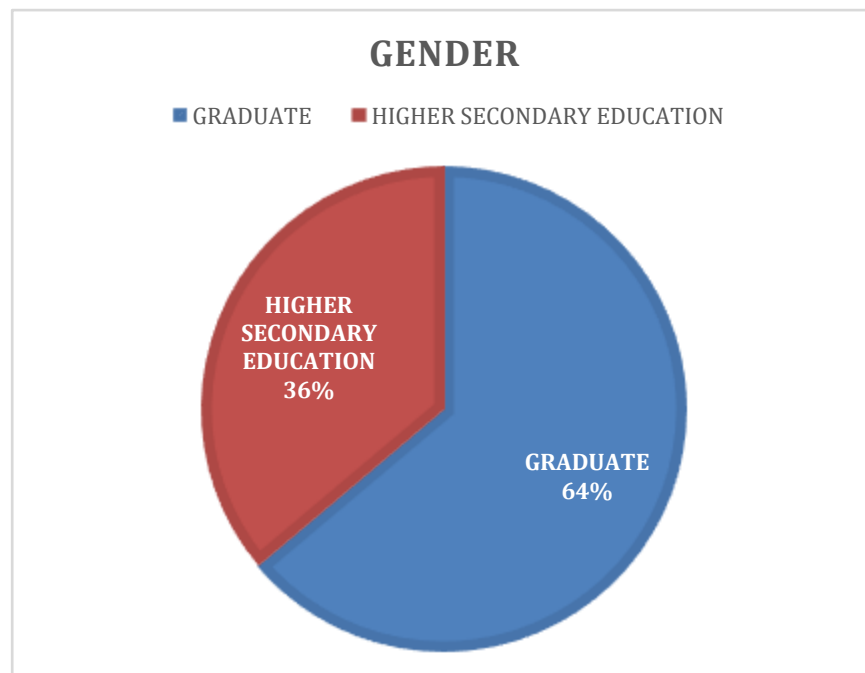


Fig 2 Shows The Gender Wise Distribution Of Educational Status Of Study Participants.

Table 1: Distribution of Responses to Dental Myths and Beliefs

Misconception/Myth	Yes (%)	No (%)	Not Sure (%)
1. Do you believe that wisdom teeth are related to human intelligence?	28.8	53.9	17.3
2. Do you believe that when there is pain in the tooth it is better to extract it than to save it?	39.5	41.7	18.8
3. Do you believe that extraction of upper teeth causes loss of vision?	38.2	44.0	17.8
4. Do you believe that decayed teeth have worms in them that cause the decay?	40.5	42.1	17.4
5. Do you believe that dental health issues like tooth pain and sensitivity are normal and need no treatment?	34.2	46.6	19.2
6. Do you believe that pain due to dental treatment is because of lack of skill of the dentist?	41.3	39.5	19.2
7. Do you believe that dental visits and dental treatment should be avoided during pregnancy?	45.1	37.0	17.9
8. Do you believe that children's teeth require no treatment as they will fall out on their own?	35.3	45.3	19.4
9. Do you believe that using hard bristled brush makes your teeth whiter?	34.9	47.4	17.7
10. Do you believe only aged people get cancer?	21.0	60.1	18.9
11. Do you believe that paddy incision has to be made by child's uncle for initial tooth eruption?	25.1	59.9	15.0
12. Do you believe that women lose a tooth for each child they give birth to?	19.6	62.8	17.6
13. Do you believe that raw Brinjal should not be given to children as it blackens teeth?	22.1	60.8	17.1
14. Do you think getting your teeth cleaned by the dentist causes loosening of tooth and reduces their strength?	38.4	43.0	18.6
15. Do you believe having gap between your front teeth (midline diastema) is lucky?	30.3	52.4	17.3

Table 1 shows the analysis of dental myths and beliefs among respondents, revealing varying levels of misconceptions about oral health. The highest prevalence of myths was observed regarding dental treatment during pregnancy 45.1% and pain-related beliefs, with 41.3% attributing dental pain to the dentist's lack of skill. Similarly, 40.5% believed that decayed teeth have worms, and 39.5% preferred extracting painful teeth rather than saving them. Misconceptions about preventive care were also prominent, with 34.2% believing that dental health issues like tooth pain and sensitivity are normal and need no treatment. Similarly, 35.3% thought children's teeth require no treatment as they will fall out, and 34.9% believed hard-bristled brushes make teeth whiter. Professional dental care myths showed that 38.4% believed cleaning by dentists weakens teeth.

Table 2 Association between Rural and Urban Population Dental Health Misconceptions

S.no	Misconception	p-value	Significance
1	Hard bristles make teeth whiter	0.00627	Significant
2	Decayed teeth have worms	0.00762	Significant
3	Pain due to dentist lack of skill	0.00871	Significant
4	Children teeth need no treatment	0.1487	Not significant
5	Better to extract painful tooth	0.1490	Not significant

Chi square test where $p < 0.05$ is statistically significant

Table 2 shows various dental health misconceptions between rural and urban populations in Western Maharashtra through chi-square analysis. The findings revealed distinct patterns in beliefs about oral healthcare practices. The most prominent misconceptions centered around the use of hard-bristled toothbrushes for teeth whitening, traditional beliefs about tooth decay being caused by worms, and attributing dental pain to a dentist's lack of skill. Additional misconceptions included beliefs about children's primary teeth not requiring treatment and the preference for tooth extraction over preservation when experiencing dental pain. The presence of these misconceptions, particularly those related to basic dental hygiene and treatment approaches, suggests a critical need for targeted dental health education programs, especially in addressing traditional beliefs that could potentially harm oral health outcomes.

Traditional beliefs had varying levels of acceptance, with 38.2% believing that upper teeth extraction affects vision, and 30.3% thinking gaps between front teeth bring luck. Lower prevalence was seen in myths about women losing teeth during childbirth, paddy incision by the uncle for tooth eruption and only aged people getting cancer, with only 19.6%, 25.1% and 21.0% believing so respectively. The myth about raw Brinjal blackening children's teeth had relatively low belief of about 22.1%.

These findings highlight the crucial need for comprehensive dental health education, particularly focusing on treatment safety, preventive care, and dispelling deeply rooted cultural myths that might prevent proper dental care seeking behaviour.

DISCUSSION

The exploration of misconceptions regarding dental health care and oral hygiene practices within rural populations of Western Maharashtra yields critical insights into the interplay between socio-cultural beliefs, education, and health literacy. The study reveals that widespread myths significantly hinder effective dental care, emphasizing the urgent need for systematic educational interventions.

One of the most prominent misconceptions identified was the belief that dental treatment during pregnancy should be avoided, with 45.1% of respondents affirming this belief. This aligns with findings from Jain et al., who reported that a significant portion of pregnant women in North India harboured misconceptions about the necessity and safety of dental care during pregnancy, potentially jeopardizing maternal and foetal health outcomes^{5, 6}. Furthermore, Imanizabayo and Andegirogish highlighted that misconceptions can lead to inadequate oral hygiene practices, further complicating dental health in vulnerable populations. These findings underline the necessity for tailored educational campaigns to improve understanding of safe dental care practices during pregnancy and to dispel harmful myths.

The survey further revealed that 41.3% of respondents attributed dental pain to the incompetence of dental professionals. This reflects a gap in health literacy that could result from a combination of limited educational access and cultural stereotypes about dental care providers. Saito et al. discussed how health literacy directly influences health behaviour, advocating for educational initiatives that promote an understanding of appropriate dental care and the role of dental professionals⁷. Consequently, integrating oral health education into community health programs can empower individuals to seek timely dental interventions and cultivate trust in dental care providers.

Moreover, the research indicated a significant prevalence of various oral health myths such as the erroneous belief that decayed teeth are caused by worms or that extraction of teeth leads to vision impairment. Such misconceptions were also documented by Poudel et al., who discussed how cultural beliefs significantly impact individuals' behaviours toward dental health in different regions^{8, 9}. Addressing these myths through community engagement and education will not only improve individual health behaviours but also foster a cultural shift towards seeking preventive care.

Additionally, traditional beliefs play a pivotal role in shaping attitudes towards dental hygiene. Various studies suggest that ingrained perceptions can often supersede scientific understanding and lead to the neglect of necessary dental treatments¹⁰. This necessitates the development of culturally sensitive educational programs that resonate with the community's values and beliefs.

Furthermore, the need for multidisciplinary collaborations encompassing dental practitioners, obstetricians, and public health professionals cannot be overstated. As suggested by Gupta in 2018 that enhancing the oral health knowledge of healthcare providers can significantly impact the quality of care rendered to patients, particularly pregnant women¹¹. Collaborative programs such as the Midwifery Initiated Oral Health initiative in Australia have reported success in improving oral health literacy among expectant mothers, emphasizing the potential benefits of interdisciplinary partnerships in rural India¹².



CONCLUSION

Upon addressing misconceptions regarding dental health in rural populations requires comprehensive educational strategies, facilitated by community engagement and multi-professional collaboration. By prioritizing health literacy and culturally relevant practices, public health initiatives can significantly improve oral health outcomes in these underserved regions. Fostering a paradigm shift in the perception of dental care will ultimately lead to a healthier, more informed populace.

Declaration by Authors

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